Since the column surface **18** against the bottom support surface **30** and the top support surface **32** against the bottom washer surface **46** create friction when rotated relative to each other, it is expected that the column surface **18**, the bottom support surface **30**, the top support surface **32**, and the bottom washer surface **46** will experience wear over a prolonged period of time. The wavy spring washer **50** is used to force the column surface **18** against the bottom support surface **30** and the top support surface **32** against the bottom washer surface **46** to remain biased against each other by pushing generally downward along the vertical axis V to thereby compensate for wear.

The interaction between the keys **43**L **43**R and the keyways **96**L, **96**R, respectively, allows the user to rotate the flat panel hinge about the horizontal axis H over a range of preferably from about **25** degrees away from the front of the hinge **10** to about 5 degrees toward the front of the hinge **10** for a total range of rotation of generally 30 degrees. However, those skilled in the art will realize that the keyways **96**L, **96**R can be located at different locations along the shaft **86**L, **86**R and/or can be different arcuate lengths, providing different ranges of movement of the tilt assemblies **60**L, **60**R relative to the support **26**.

Each of the left and right torque elements **62**L, **62**R is geometrically configured to have substantially uniform strength whereby substantially uniform forces are created between each of the left and right shafts **86**L, **86**R, respectively, to provide torque transfer and angular positional control of the left and right shafts **86**L, **86**R with respect to the left and right torque elements **62**L, **62**R, respectively. The interference fit of the second end **90**L of the shaft **86**L with the first end **64**L of the torque element **62**L and the interference fit of the second end **90**R of the shaft **86**R with the first end **64**R of the torque element **62**R provide a smooth rotation of the tilt assembly **60**R relative to the support **26**.

The combination of the torsion springs **100**L, **100**R and the torque elements **62**L, **62**R results in smooth movement of the flat panel display **11**. The torsion springs **100**L, **100**R are necessary to counteract the torque moment generated by the flat panel display **11**, which is not mounted to pivot about its center of gravity. The torsion springs **100**L, **100**R balance the weight of the flat panel display **11**, so that the flat panel display **11** can be tilted upwardly and downwardly about the horizontal axis H easily and with generally the same force.

It will be appreciated by those skilled in the art that changes could be made to the embodiment described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiment disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

1. A hinge connecting a first member to a second member, the hinge comprising:

a support rotatably connected to the first member about a first axis;

a first torque element having a first end including an open portion and a closed portion, the first torque element having an elongated second end extending from the closed portion, the second end of the first torque element being fixedly connected to the support;

a first shaft extending from the second member and being rotatable about a second axis, the first shaft having first and second ends, the first end of the first shaft being fixedly connected to the second member, the first shaft being rotatably located within the first end of the first torque element; and

a first biasing element positioned between the first shaft and the support and biasing the shaft to rotate about the second axis in a first direction.

2. The hinge according to claim **1** wherein the first biasing element comprises a first torsion spring having first and second ends and a plurality of coils therebetween, the first end of the first torsion spring being secured to the first shaft, the second end of the first torsion spring being secured to the support, and the plurality of coils surrounding the first shaft.

3. The hinge according to claim **2** wherein the second end of the first shaft further comprises a first slot extending along a plane through the second axis from the second end to a location between the first end and the second end of the first shaft and wherein the first end of the first torsion spring is located in the first slot.

4. The hinge according to claim **3** wherein the first shaft is rotatably located within the first end of the first torque element between the first slot and the first end of the first shaft.

5. The hinge according to claim **1** further comprising a connector secured to the first member, the support being rotatably mounted to the connector.

6. The hinge according to claim **1** further comprising a first bracket fixedly connected to the second member, the first shaft extending from the first bracket.

7. The hinge according to claim **1** further comprising:

a second torque element having a first end including an open portion and a closed portion, the second torque element having an elongated second end extending from the closed portion, the second end of the second torque element being fixedly connected to the second element;

a second shaft extending from the second member and being rotatable about the second axis, the second shaft having first and second ends, the first end of the second shaft being fixedly connected to the second member, the second shaft being rotatably located within the first end of the second torque element; and

a second biasing element positioned between the second shaft and the support and biasing the shaft to rotate about the second axis in the first direction.

8. The hinge according to claim **7** wherein the second biasing element comprises a second torsion spring having first and second ends and a plurality of coils therebetween, the first end of the second torsion spring being secured to the second shaft, the second end of the second torsion spring being secured to the support, and the plurality of coils surrounding the second shaft.

9. The hinge according to claim **8** wherein the second end of the second shaft further comprises a second slot extending along a plane through the second axis from the second end to a location between the first end and the second end of the second shaft and wherein the first end of the second torsion spring is located in the second slot.

10. The hinge according to claim **9** wherein the second shaft is rotatably located within the first end of the second torque element between the second slot and the first end of the second shaft.

11. The hinge according to claim **7** further comprising a second bracket fixedly connected to the second member, the second shaft extending from the second bracket.

12. The hinge according to claim **11** wherein the first and second brackets are connected by a link.

13. The hinge according to claim **7** wherein the first end of each of the first and second torque elements is "C-shaped".

14. The hinge according to claim 13 wherein the second end of each of the first and second torque elements is generally diametrically opposed from the open portion of each of the first and second torque elements, respectively.

15. The hinge according to claim 14 wherein the second end of each torque element is positioned in a plane generally perpendicular to the second axis.

16. The hinge according to claim 13 wherein an interference fit exists between the first shaft and the first end of the first torque element and between the second shaft and the first end of the second torque element.

17. The hinge according to claim 16 wherein each of the first and second torque elements is geometrically configured to have substantially uniform strength whereby substantially uniform forces are created between each of the first and second torque elements and the first and second shafts, respectively, to provide torque transfer and angular positional control of the first and second shafts with respect to the first and second torque elements, respectively.

18. A hinge connecting a first member to a second member, the hinge comprising:

a connector constructed of a polymeric material secured to the first member and having a first axis, the connector having a generally flat connector surface; and

a support constructed of a metallic material rotatably connected to the connector about the first axis, the support having a first generally flat support surface, the connector surface being biased against the first generally flat support surface, the second member being connected to the support.

19. The hinge according to claim 18, further comprising a friction piece rotatably secured to the connector about the first axis and wherein the support further includes a second generally flat support surface, the friction piece being biased against the second generally flat support surface.

20. The hinge according to claim 19 wherein the friction piece is constructed of a polymeric material.

21. The hinge according to claim 18 wherein the connector includes a metal stiffener at least partially disposed within the polymeric material along the first axis, the stiffener extending through the support and the friction piece.

22. The hinge according to claim 21, further comprising a wavy spring washer mounted on the stiffener and being retained thereon by an end piece such that the connector surface, support surface and friction piece are biased into compression.

23. A hinge connecting a first member to a second member, the hinge comprising:

a connector secured to the first member and having a first axis;

a support constructed of a metallic material rotatably connected to the connector about the first axis, the support having a first generally flat support surface; and

a friction piece constructed of a polymeric material rotatably connected to the support about the first axis and being rotatably fixed to the connector, the friction piece being biased against the first generally flat support surface, the second member being connected to the support.

24. The hinge according to claim 23, wherein the support further comprises a second generally flat support surface and the connector includes a generally flat connector surface, the connector surface being biased against the second support surface.

25. The hinge according to claim 24 wherein the connector is constructed from a polymeric material.

26. The hinge according to claim 25 wherein the connector includes a metal stiffener at least partially disposed within the polymeric material along the first axis, the stiffener extending through the support and the friction piece.

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